
Ball and Socket Joint for a Motor Vehicle

Patent Claims

- 5 1. A ball and socket joint for a motor vehicle, with a ball pivot (3), which has a pin (2) and a joint ball (1) and is arranged with its said joint ball (1) rotatably and pivotably in a recess (4) provided in a housing (5) and extends out of this said housing through a pin opening (6), and with a sensor, **characterized in that** the sensor is a moisture sensor (12) that is in connection with the recess (4).
- 10 2. A ball and socket joint in accordance with claim 1, **characterized in that** the moisture sensor (12) is fastened in or at the housing (5).
3. A ball and socket joint in accordance with claim 1 or 2, **characterized in that** the moisture sensor (12) is arranged in the recess (4).
- 15 4. A ball and socket joint in accordance with one of the above claims, **characterized in that** the moisture sensor (12) is arranged in the area of the housing (5) facing away from the pin opening (6).
5. A ball and socket joint in accordance with one of the above claims, **characterized in that** a protective wall (9) provided with said passage openings (15) is arranged between the moisture sensor (12) and the recess (4).

6. A ball and socket joint in accordance with claim 5, **characterized in that** the passage openings (15) extend around a central wall area (14).

7. A ball and socket joint in accordance with one of the above claims, **characterized in that** the moisture sensor (12) has two said electrodes (19, 20), between which a material (28), which is
5 sensitive to moisture from an electrical point of view, is arranged.

8. A ball and socket joint in accordance with claim 7, **characterized in that** the moisture-sensitive material (28) is a moisture-sensitive dielectric.

9. A ball and socket joint in accordance with claim 7 or 8, **characterized in that** the moisture-sensitive material (28) is formed by a hygroscopic layer.

10. A ball and socket joint in accordance with one of the claims 7 through 9, **characterized in that**
10 the moisture-sensitive material (28) consists of polyamide film or aluminum oxide.

11. A ball and socket joint in accordance with one of the claims 7 through 9, **characterized in that**
a lubricant (29) is introduced into the recess (4) and the moisture-sensitive material (28) is formed
by at least part of this said lubricant (29).

12. A ball and socket joint in accordance with one of the claims 7 through 11, **characterized in**
15 **that** the electrodes (19, 20) are designed as bent metal plates.

13. A ball and socket joint in accordance with one of the claims 7 through 12, **characterized in**
that the electrodes (19, 20) are formed by galvanic layers or conductive coatings.

14. A ball and socket joint in accordance with one of the above claims, **characterized in that** the joint ball (1) is arranged in the housing (5) via the intermediary of a calotte shell (25).

15. A ball and socket joint in accordance with claim 14, **characterized in that** the moisture sensor (12) is provided at the calotte shell (25).

5 16. A ball and socket joint in accordance with one of the above claims, **characterized in that** the moisture sensor (12) is arranged at a sensor assembly unit housing (27).